US Wall Halo Scintillator Counter(HSC) Installation

Brandon Soubasis, Dũng Phan, Will Flanagan

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Outline

- Update on installation of HSC
- Event Display with HSC

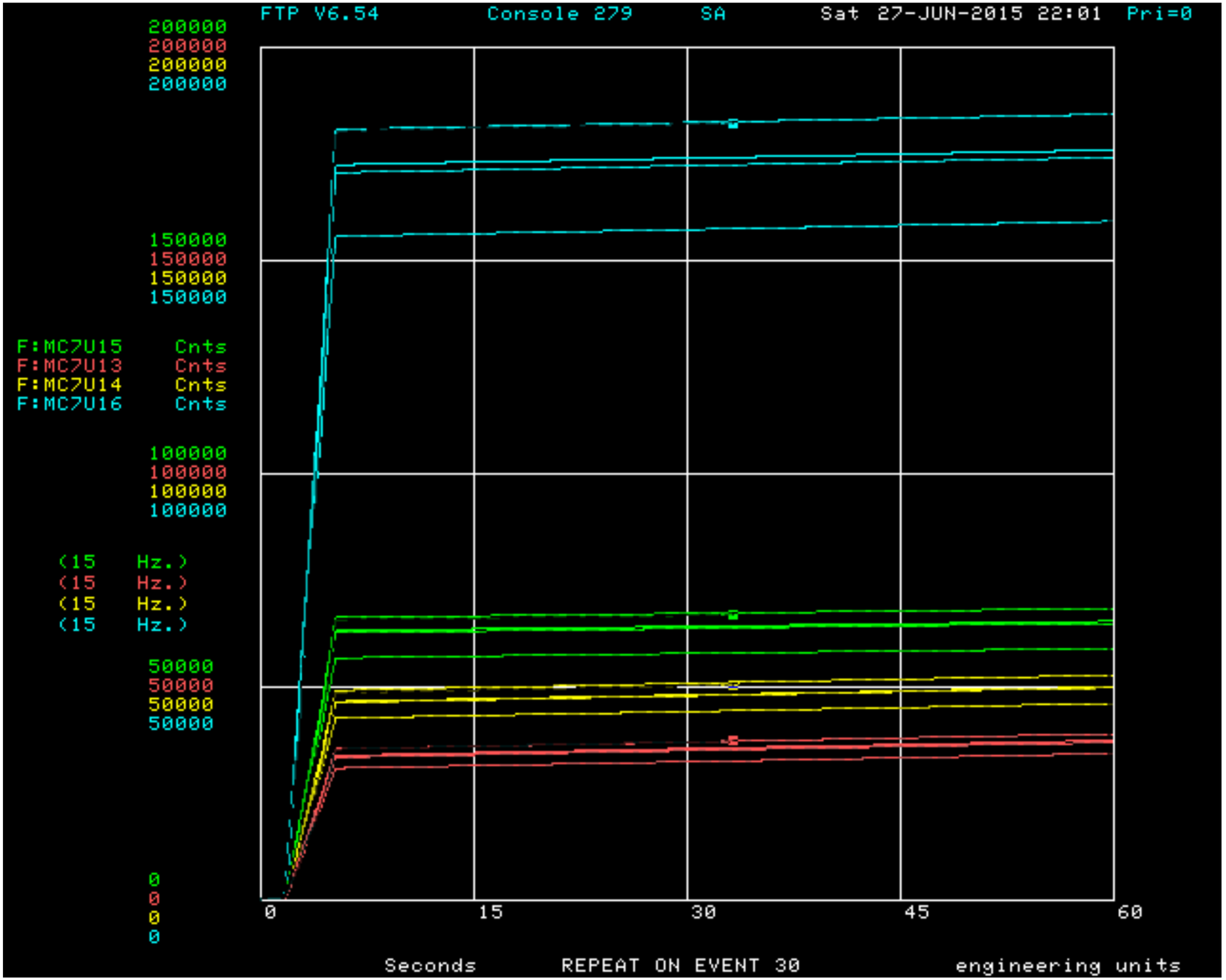
- Counters on the upstream wall!
  - Measure any secondary beam halo.
  - Help understand radiation field of MC7.

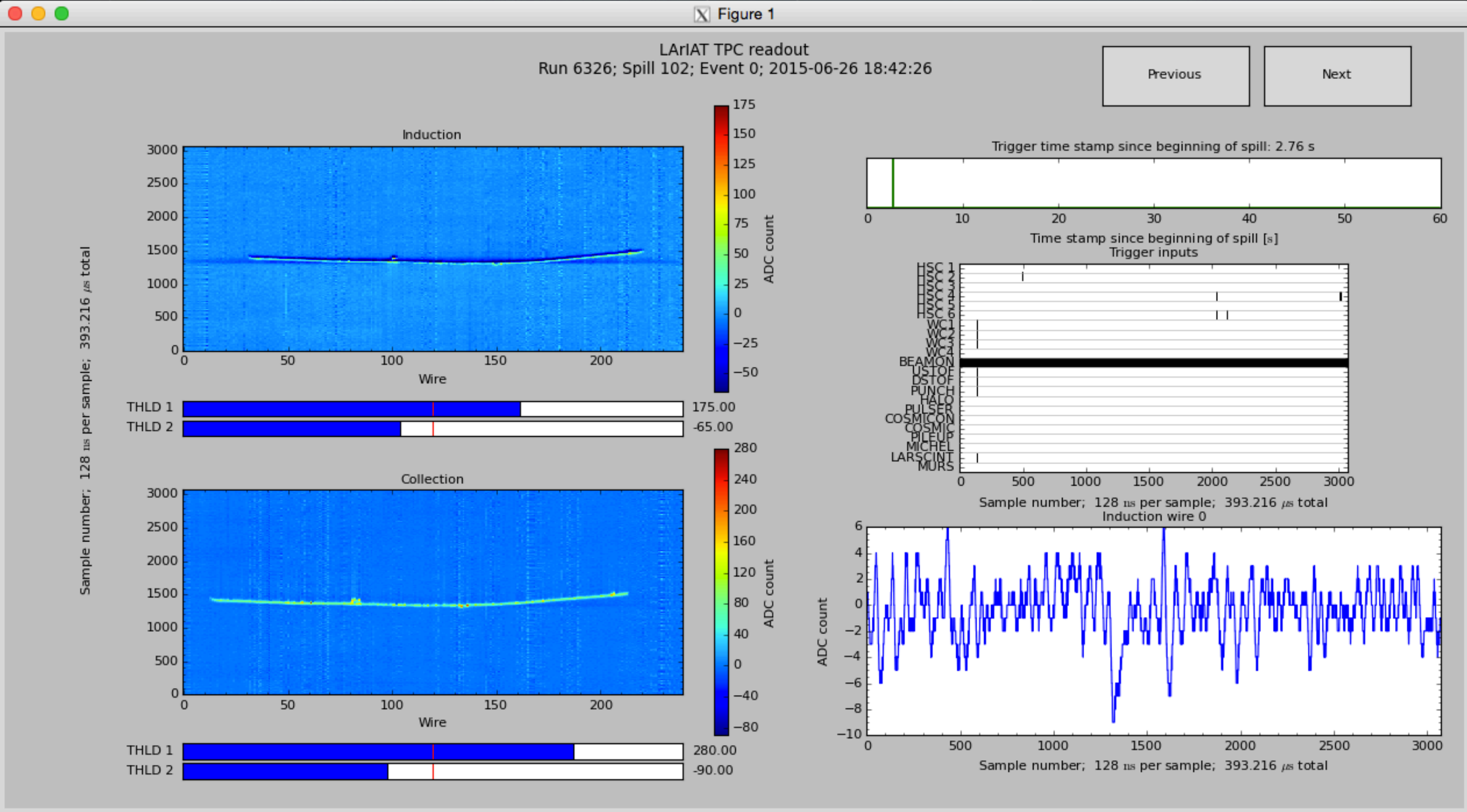
- Wall halo counters are connected into the quad scalar and sent into acnet.
- Bill has helped us getting plugged into a spare v1740 board.

PB S60 PPD Params<NoSets>

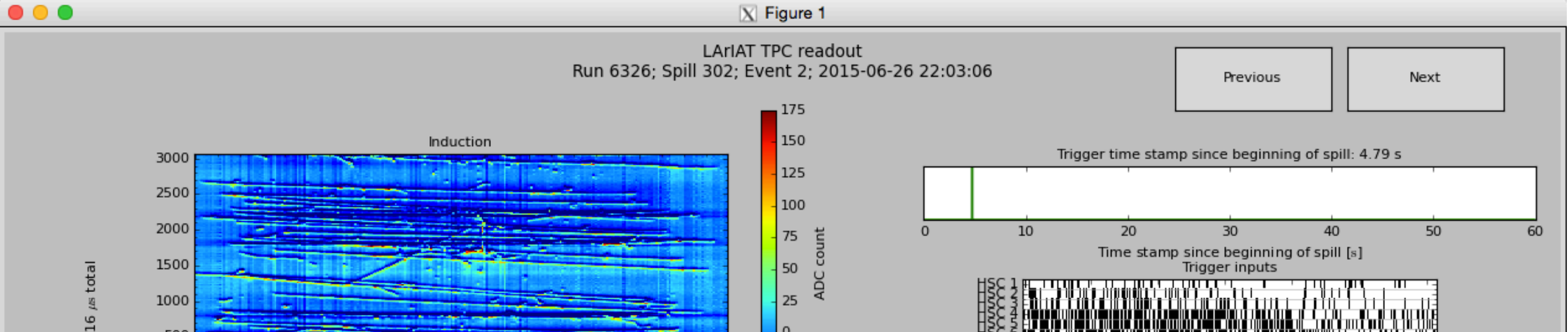
```
S60  User Input Parameters          SET      D/A   A/D  Com-U ◆PTools◆
                                  Fast Time Plot
 *SA◆ X-A/D   X=TIME*40        Y=F:MC7U15     ,F:MC7U13     ,F:MC7U14     ,F:MC7U16
 BL-- Eng-U   I= 0             I= 0           , 0           , 0           , 0
 r_30 AUTO    F= 60            F= 200000      , 200000      , 200000      , 200000
 ◆Save◆  ◆Restore◆                          Return
 F:MC7U01      MC7 Wire Chamber WC1                    7609    Cnts
 F:MC7U02      MC7 Wire Chamber WC2                    6143    Cnts
 F:MC7U03      MC7 Wire Chamber WC3                    3073    Cnts
 F:MC7U04      MC7 Wire Chamber WC4                    2500    Cnts
 F:MC7U05      MC7 Aero Gel AG US E                    3144    Cnts
 F:MC7U06      MC7 Aero Gel AG US W                    184     Cnts
 F:MC7U07      MC7 Aero Gel AG DS E                    44      Cnts
 F:MC7U08      MC7 Aero Gel AG DS W                    70      Cnts
 F:MC7U09      LArIAT Cosmic Accidental                442     Cnts
 F:MC7U10      LArIAT Halo tertiary bm                 6664    Cnts
 F:MC7U11      LArIAT TPC Readout Trig                 40      Cnts
 F:MC7U12      LArIAT Fast Trigger                     42      Cnts
 F:MC7U13      LArIAT Wall Halo 1                      37031   Cnts
 F:MC7U14      LArIAT Wall Halo 2                      50351   Cnts
 F:MC7U15      LArIAT Wall Halo 3                      66338   Cnts
 F:MC7U16      LArIAT Wall Halo 4                      2E+05   Cnts
 F:MC7U17      LArIAT Wall Halo 5                      2E+05   Cnts
 F:MC7U18      LArIAT Wall Halo 6                      2E+05   Cnts
 F:MC7U19      LArIAT Spare Scaler                      0      Cnts
 F:MC7U20      LArIAT Spare Scaler                      0      Cnts
```

- We can see now the HSC's reaction to the beam spill.



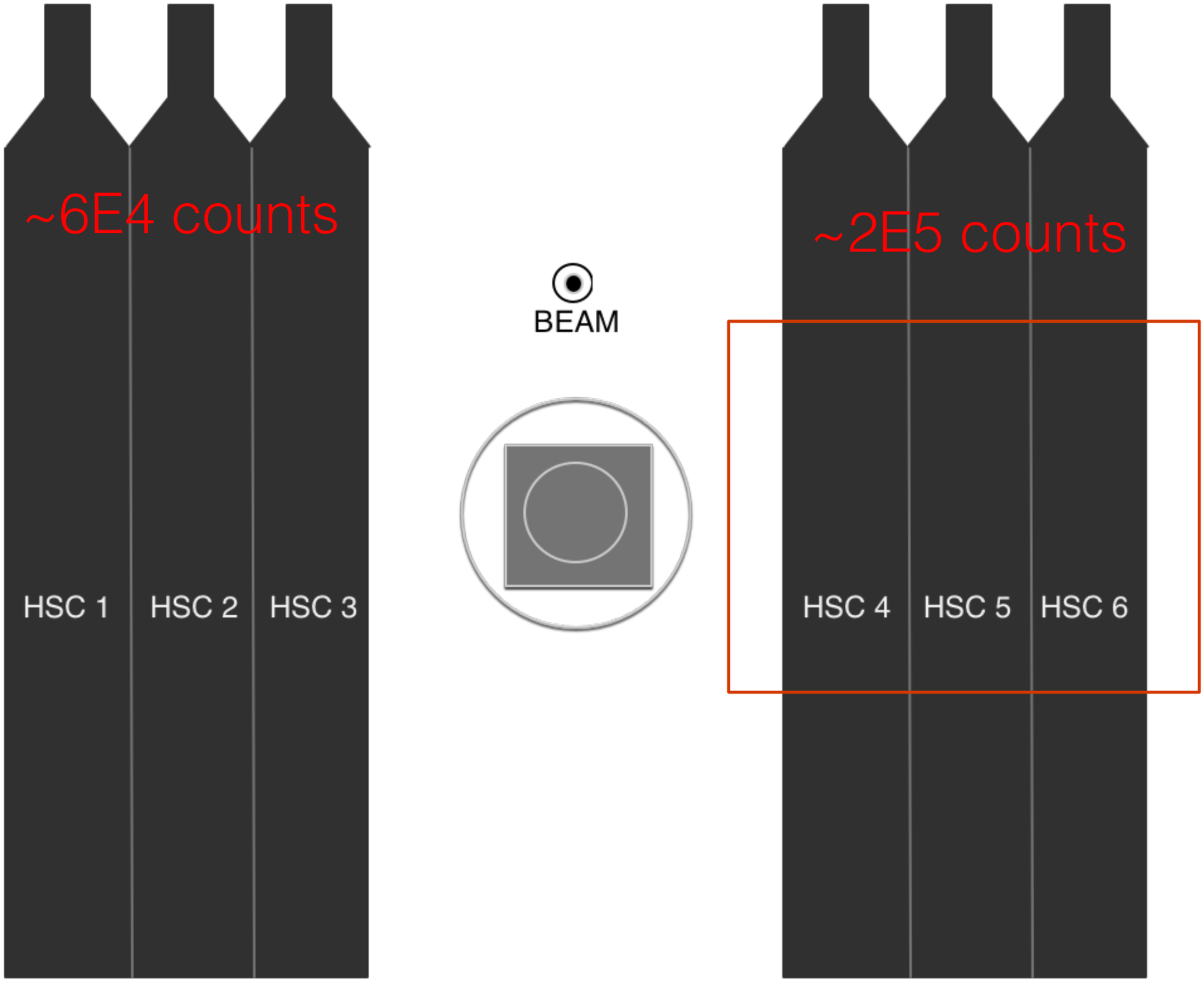


- I have made changes to the event display to output all 6 wall HSCs.
  - Single tracks seem to quiet in the counters

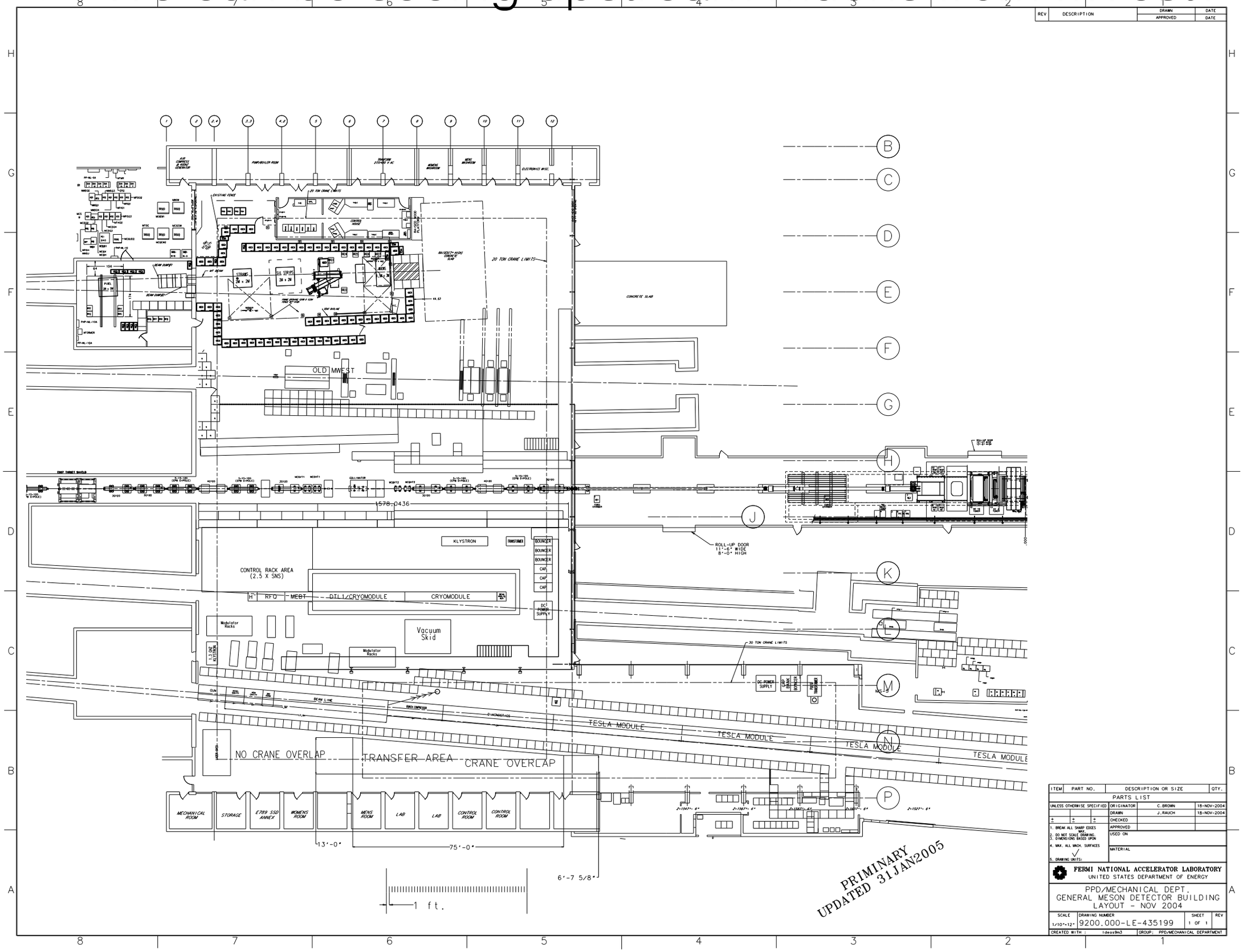


- Notice the wall counter are lighting up when we have a lot of through the LArTPC.
  - Can we veto on the wall HSCs in the v1495.

- We have noticed that HSC 4, HSC 5, and HSC 6 are seeing higher counts then HSC 1, HSC 2, and HSC 3.

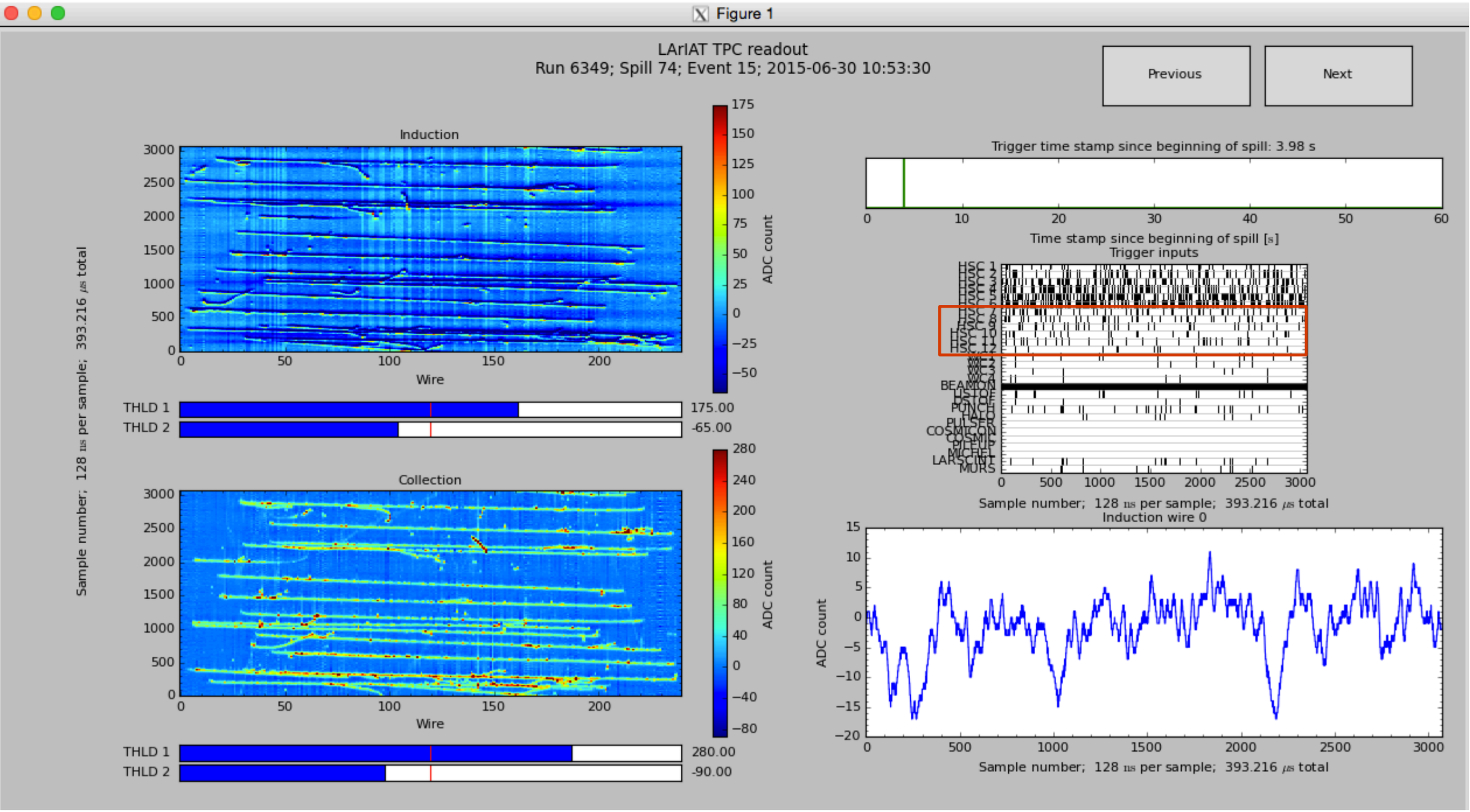


➢ We can be seeing upstream muons from MTest?



- As of June 29th the movable rack has also been installed.

- I have made changes to the event display again adding the movable rack HSCs channels.



BACK UP

Figure 1

LArIAT TPC readout
Run 6326; Spill 302; Event 3; 2015-06-26 22:03:06

Previous | Next

Induction

Wire

ADC count

THLD 1 175.00
THLD 2 -65.00

Collection

Wire

ADC count

THLD 1 280.00
THLD 2 -90.00

Sample number; 128 ns per sample; 393.216 μs total

Trigger time stamp since beginning of spill: 5.26 s

Time stamp since beginning of spill [s]

Trigger inputs

HSC 1
HSC 2
HSC 3
HSC 4
HSC 5
HSC 6
WC1
WC2
WC3
WC4
BEAMON
USTOF
DSTOF
PUNCH
HALO
PULSER
COSMICON
COSMIC
PILEUP
MICHEL
LARSCINT
MURS

Sample number; 128 ns per sample; 393.216 μs total

Induction wire 0

ADC count

Sample number; 128 ns per sample; 393.216 μs total

Figure 1

LArIAT TPC readout
Run 6326; Spill 300; Event 2; 2015-06-26 22:01:06

Previous | Next

Induction

Collection

Wire

ADC count

THLD 1 175.00
THLD 2 -65.00

THLD 1 280.00
THLD 2 -90.00

Sample number; 128 ns per sample; 393.216 μs total

Trigger time stamp since beginning of spill: 3.12 s

Time stamp since beginning of spill [s]

Trigger inputs

HSC 1
HSC 2
HSC 3
HSC 4
HSC 5
HSC 6
WC1
WC2
WC3
WC4
BEAMON
USTOF
DSTOF
PUNCH
HALO
PULSER
COSMICON
COSMIC
PILEUP
MICHEL
LARSCINT
MURS

Sample number; 128 ns per sample; 393.216 μs total

Induction wire 0

ADC count

Sample number; 128 ns per sample; 393.216 μs total